

RULE 1116

Automotive Refinishing Operations

(A) General

(1) Purpose

- (a) The purpose of this Rule is to limit the emission of VOCs from the Finishing or Refinishing of motor vehicles, Mobile Equipment and their parts and components.

(2) Applicability

- (a) This rule applies to any facility engaged in the assembly of or refinishing of Group I (buses and Mobile Equipment) and Group II (passenger cars, Large/Heavy Duty Truck cabs and chassis, Light and Medium Duty Trucks and Vans, and motorcycles) Vehicles, when the process(es) utilize any of the products specified in subsection (C)(1)(a) of this rule.

(B) Definitions

For the purposes of this rule, the following definitions apply:

- (1) "Additive": Any substance added in small quantities to another substance in order to increase volume and/or change the physical properties of the mixture.
- (2) "Anti-glare/Safety Coating": A Coating which does not reflect light.
- (3) "Catalyst": A substance whose presence initiates/enhances the reaction between chemical compounds.
- (4) "Coating": Any material which is applied to a surface and which forms a film in order to beautify and/or protect such surface.
- (5) "Color Match": The ability of a repair Coating to blend into and/or pair with an existing Coating on a vehicle so that color difference is not visibly detectable.
- (6) "Electrostatic Application": The application of charged atomized paint droplets which are deposited by electrostatic attraction.

- (7) "Exempt Compounds": Those compounds listed in 40 CFR 51.100(S)(1).
- (8) "Extreme Performance Coating": Any coating used on the surface of a Group I Vehicle, Mobile Equipment or their parts or components which during intended use is exposed to any of the following conditions:
- (a) Industrial grade detergents, cleaners, or abrasive scouring agents.
 - (b) Extreme environmental conditions as determined by the Air Pollution Control Officer during the vehicle's principal use.
 - (c) Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solution.
 - (d) Repeated exposure to temperatures in excess of 250 °F.
 - (e) Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleaners or scouring agents.
- (9) "Finish": The Coating of incomplete vehicles, their parts and components, or Mobile Equipment for which the original Coating was not applied from an Original Equipment Manufacturer (OEM) plant Coating assembly line.
- (10) "Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds": The weight of VOC per combined volume of VOC and Coating solids is calculated by the following equation:
- $$G_{\text{VOC}} = \frac{W_s - W_w - W_{\text{ES}}}{V_M - V_w - V_{\text{ES}}}$$
- Where:
- G_{VOC} = Grams VOC/L of Coating Less Water and Exempt Compounds
 - W_s = weight of volatile compounds in grams
 - W_w = weight of water in grams
 - W_{ES} = weight of Exempt Compounds in grams
 - V_M = volume of material in liters
 - V_w = volume of water in liters
 - V_{ES} = volume of Exempt Compounds in liters
- (11) "Group I Vehicles and Mobile Equipment": Public transit buses and Mobile Equipment.
- (12) "Group II Vehicles": Passenger cars, Large/Heavy Duty Truck cabs and chassis, Light and Medium Duty Trucks and Vans, and motorcycles.

- (13) "High-Volume, Low-Pressure (HVL) Spray": A Coating application method using pressurized air at a permanent pressure of between 0.1 and 10.0 psig, not to exceed 10.0 psig, measured at the air cap of the Coating application system, and a permanent liquid Coating pressure of not more than 50.0 psig.
- (14) "Large/Heavy Duty Trucks": Any truck having a manufacturer's gross vehicle weight rating of over 10,000 pounds.
- (15) "Light and Medium Duty Trucks and Vans": Any truck or van having a manufacturer's gross vehicle weight rating of 10,000 pounds or less.
- (16) "Metallic Topcoat": Any Coating which contains more than 5 g/L (.042 lb/gal) of metal particles, as applied, where such particles are visible in the dried film.
- (17) "Mobile Equipment": Any equipment which may be drawn or is capable of being driven on a roadway, including, but not limited to, truck bodies, truck trailers, utility bodies, camper shells, mobile cranes, bulldozers, street cleaners, golf carts, and implements of husbandry.
- (18) "Multi-Stage Topcoat System": A Topcoat system composed of either a basecoat/clearcoat, a basecoat/midcoat/clearcoat, or a groundcoat/basecoat/midcoat/clearcoat. The VOC content of a Multi-Stage Topcoat System shall be determined according to the following formulas:

For a basecoat/clearcoat system:

$$VOC_{MS} = \frac{VOC_{bc} + 2VOC_{cc}}{3}$$

For a 3 Stage coating system:

$$VOC_{MS} = \frac{VOC_{bc} + VOC_{mc} + 2VOC_{cc}}{4}$$

For a 4 Stage coating system:

$$VOC_{MS} = \frac{VOC_{gc} + VOC_{bc} + VOC_{mc} + 2VOC_{cc}}{5}$$

Where: **VOC_{MS}** is the average of the VOC content, as applied, and used to determine compliance with the standards in subsection (C)(1)(a)(i).
VOC_{gc} is the VOC content, as applied, of a pigmented groundcoat or tinted Primer Sealer.
VOC_{bc} is the VOC content, as applied, of a pigmented basecoat.
VOC_{mc} is the VOC content, as applied, of a translucent midcoat.
2VOC_{cc} is two times the VOC content, as applied, of a transparent clearcoat.

- (19) "Pretreatment Wash Primer": Any Coating which contains a minimum of 0.5 percent acid by weight, is necessary to provide surface etching and is applied directly to bare metal surfaces to provide corrosion resistance and adhesion.
- (20) "Primer": Any Coating applied prior to the application of a Topcoat for the purpose of corrosion resistance and adhesion of the Topcoat.
- (21) "Primer Sealer": Any Coating applied prior to the application of a Topcoat for the purpose of corrosion resistance, adhesion of the Topcoat, color uniformity, and to promote the ability of an undercoat to resist penetration by the Topcoat.
- (22) "Primer Surfacer": Any Coating applied prior to the application of a Topcoat for the purpose of corrosion resistance, adhesion of the Topcoat, and which promotes a uniform surface by filling in surface imperfections.
- (23) "Reducer": The solvent used to thin enamel.
- (24) "Refinishing": Any Coating of vehicles, their parts and components, or mobile equipment, including partial body collision repairs, for the purpose of protection or beautification and which is subsequent to the original Coating applied at an Original Equipment Manufacturing (OEM) plant Coating assembly line.
- (25) "Specialty Coatings": Coatings which are necessary due to unusual job performance requirements. Said Coatings include, but are not limited to, adhesion promoters, uniform finish blenders, elastomeric materials, gloss flatteners, bright metal trim repair, and Anti-Glare/Safety Coatings.
- (26) "Surface Preparation Solvent": Any solvent used primarily for the conditioning of a surface to receive a Coating.
- (27) "Theoretical Potential Emissions": The greater of design capacity, or maximum production (based on 8760 hours/year) before add-on controls.
- (28) "Topcoat": Any Coating applied over a Primer, Primer system or an original OEM finish for the purpose of protection or appearance. For the purposes of this rule, Multi-Stage Coating Systems shall be considered Topcoats.

- (29) "Transfer Efficiency": The ratio of Coating solids adhering to the object being coated to the total amount of Coating solids used in the application process, expressed as a percentage.
- (30) "Volatile Organic Compound" (VOC): Any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and Exempt Compounds.

(C) Standards

(1) Limits

- (a) Effective on the dates specified, any person who applies Coatings to Group I Vehicles and Mobile Equipment, Group II Vehicles, or their parts and components, shall comply with subsections (i) or (ii) below:

(i) Group I Vehicles and Mobile Equipment

1. Any person shall not Finish or refinish Group I Vehicles and Mobile Equipment or their parts and components where Color Match is not required, using any Coating with a VOC content in excess of the following limits, expressed as Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds, as applied, unless emissions of VOC to the atmosphere are controlled by air pollution abatement equipment with combined capture efficiency and control efficiency of the abatement device of at least 85 percent, and which as been approved in writing by the Air Pollution Control Officer:

	On and after <u>July 1, 1997</u> VOC limits
Pretreatment Wash Primer	780 g/L (6.5 lbs/gal)
Primer	250 g/L (2.1 lbs/gal)
Primer Sealer	250 g/L (2.1 lbs/gal)
Topcoat	340 g/L (2.8 lbs/gal)
Metallic Topcoat	420 g/L (3.5 lbs/gal)
Extreme Performance	420 g/L (3.5 lbs/gal)

(ii) Group II Vehicles

1. Any person shall not refinish Group II Vehicles, their parts and components, or Group I Vehicles and Mobile Equipment where Color Match is required, using any Coating with a VOC content in excess of the following limits, expressed as Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds, as applied, unless emissions of VOC to the atmosphere are controlled by air pollution abatement equipment with a combined capture efficiency and control efficiency of the abatement device of at least 85 percent, and which has been approved in writing by the Air Pollution Control Officer:

	On and after <u>April 26, 1999</u> VOC limits	On and after <u>July 1, 2000</u> VOC limits
Pretreatment Wash Primer	780 g/L (6.5 lbs/gal)	780 g/L (6.5 lbs/gal)
Primer/Primer Surfacer	250 g/L (2.1 lbs/gal)	250 g/L (2.1 lbs/gal)
Primer Sealer	340 g/L (2.8 lbs/gal)	340 g/L (2.8 lbs/gal)
Topcoat	420 g/L (3.5 lbs/gal)	420 g/L (3.5 lbs/gal)
Metallic Topcoat	420 g/L (3.5 lbs/gal)	420 g/L (3.5 lbs/gal)
Multi-Stage Topcoat System	540 g/L (4.5 lbs/gal)	420 g/L (3.5 lbs/gal)

(2) Transfer Efficiency

- (a) For all Coatings, any person shall not apply any Coating to any Group I Vehicles or Mobile Equipment or Group II Vehicles or their parts and components unless one of the following methods is used:
 - (i) Electrostatic Application equipment, operated in accordance with the manufacturer's recommendations;
 - (ii) HVLP Spray equipment, operated in accordance with the manufacturer's recommendations;
 - (iii) Any other Coating application which has been demonstrated to the satisfaction of the Air Pollution Control Officer to be capable of achieving at least 65 percent Transfer Efficiency, as per section (G)(2)(c), and for which written approval of the Air Pollution Control Officer has been obtained.

(3) Prohibition of Specification

- (a) No person shall solicit or require for use or specify the application of a Coating on any Group I Vehicle or Mobile Equipment or Group II Vehicle, or part or component thereof if such use or application results in a violation of the provisions of this Rule. The prohibition of this subsection shall apply to all written or oral contracts under the terms of which any Coating which is subject to the provisions of this rule is to be applied to any motor vehicle, Mobile Equipment, or part or component at any physical location within the District.

(4) Prohibition of Sale

- (a) On or after April 26, 1999, a person shall not offer for sale or sell within the District any Coating that does not meet the VOC content limits which become effective on April 26, 1999, as set forth in subsection (C)(1)(a) of this rule. The prohibition of this section shall apply to the sale of any Coating which will be applied at any physical location within the District, except:
 - (i) Coatings in spray cans, and
 - (ii) Automotive Coatings sold for uses other than the Finishing or Refinishing of Group I Vehicles and Mobile Equipment or Group II Vehicles, or parts thereof. In such cases, the seller should document the nature of the alternate use.

(5) Compliance Statement Requirement

- (a) The manufacturer of Coatings subject to this rule shall include a designation of VOC as supplied on data sheets; including Coating components, expressed in grams per liter or pounds per gallon, excluding water and Exempt Compounds.

(6) Surface Preparation and Cleanup Solvent

- (a) The requirements of this subsection shall apply to any person using solvent for Surface Preparation and cleanup.
 - (i) Any person shall not use an organic compound(s), or mixture thereof, (excluding Exempt Compounds) for Surface Preparation with a VOC content in excess of 200 grams per liter (1.67 pounds per gallon) of material, as applied.
 - (ii) Any person shall use closed, non-absorbent containers for the storage or disposal of any applicator (including brushes, swabs, cloth or paper) used for solvent Surface Preparation and cleanup.

- (iii) Any person shall store fresh or spent solvent in closed containers.
- (iv) Any person shall not use organic compounds for the cleanup of spray equipment including paint lines unless an enclosed system is used for cleanup. The system shall enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures. Equipment used shall minimize the evaporation of organic compounds to the atmosphere.

(7) Specialty Coatings

- (a) Any person shall not use any specialty coating with a VOC content, as applied, in excess of 840 g/L (7.0 lb/gal), excluding water and Exempt Compounds. Use of all Specialty Coatings except Anti-Glare/Safety Coatings shall not exceed 5.0 percent of all Coatings applied, averaged on a monthly basis. The application of Topcoats with a Specialty Coating used as an Additive shall be subject to the Topcoat limits in subsections (C)(1)(a)(i) or (C)(1)(a)(ii).

(8) Extreme Performance Coating Requirement

- (a) Any person seeking to use an extreme performance coating in any coating operation which is subject to this rule shall comply with the requirements of subsection (E)(1)(a).

(D) Exemptions

(1) The provisions of this Rule shall not apply to:

- (a) A facility which uses a total of less than one (1) gallon of Coating, including any VOC-containing materials added to the original Coating as supplied by the manufacturer, subject to this Rule, in any one day; or
- (b) Surface coating operations that emit not more than 3 pounds of VOCs per day and not more than 200 pounds of VOCs per calendar year.

(2) The July 1, 2000 limits which are set forth in subsections (C)(1)(a)(i) and (C)(1)(a)(ii) shall not apply to:

- (a) automotive refinishing operations which emit not more than 3 pounds of VOC per hour, before add-on controls; **or**
- (b) automotive refinishing operations which emit not more than 15 pounds of VOC per day, before add-on controls; **or**

- (c) facilities that do not exceed 10 tons per year Theoretical Potential Emissions.
- (3) For the purposes of claiming an exemption pursuant to subsections (D)(2)(a) or (D)(2)(b), hourly or daily emissions shall be considered from January 1, 1997 forward.
- (4) Once a facility exceeds 3 pounds of VOC per hour, or 15 pounds of VOC per day, respectively, it will become and remain subject to the July 1, 2000 limits even if its emissions later fall below the applicability threshold.
- (5) Any facility or person classified as exempt or claiming to be exempt under this section (D), shall meet the record keeping requirements of this rule so as to be able to prove the exemption status.

(E) Administrative Requirements

(1) Extreme Performance Coating Petition

- (a) Any person seeking to use an extreme performance coating in any coating operation which is subject to the provisions of this rule shall comply with the following requirements:
 - (i) A petition shall be submitted to the Air Pollution Control Officer stating the performance requirements, volume of coating, and VOC level which is attainable. The petitioner must also, in a written statement, certify that after reasonable inquiry, to their knowledge, no other coating(s) are available which will meet the requirements of subsection (C)(1)(a) of this rule and of the specified performance requirements for a specific contract.
 - (ii) If the Air Pollution Control Officer grants written approval, such petition will be repeated on an annual basis.
 - (iii) If the Air Pollution Control Officer grants written approval, such approval shall contain volume and VOC limit conditions.
 - (iv) Records must be maintained as in Section (F)(1).

(2) Rule 442 Applicability

- (a) Any Coating, Coating operation, or facility which is exempt from all or a portion of the VOC limits of this rule shall comply with the provisions of Rule 442.

(F) Monitoring and Records

- (1) All persons subject to this rule and any person claiming any exemption under subsection (D)(1) shall comply with the following requirements:
 - (a) Maintain and have available during an inspection, a current list of Coatings in use which provides all of the Coating data necessary to evaluate compliance, including the following information separately for both Group I Vehicles and Mobile Equipment and Group II Vehicles, as applicable:
 - (i) Additive, Coating, Catalyst, and Reducer used.
 - (ii) mix ratio of components used.
 - (iii) VOC content of Coating as applied.
 - (b) Maintain records on a daily basis including:
 - (i) Coating and mix ratio of components used in the Coating; and
 - (ii) quantity of each Coating applied.
 - (iii) any person/facility utilizing an add-on emission control device/system as a means of complying with provisions of this rule shall also maintain records of key system operating and maintenance data for the purpose of demonstrating continuous compliance during periods of emission producing activities. The data shall be recorded in a manner as prescribed by the District.
 - (c) The person shall maintain records on a monthly basis showing the type and amount of solvent used for cleanup and Surface Preparation.
 - (d) Such records shall be retained and available for inspection by the Air Pollution Control Officer for the previous 24 month period.

(G) Test Methods

- (1) A violation of the limits contained in this rule as determined by any one of these test methods shall constitute a violation of this rule.
- (2) The following specified test methods shall be used to determine compliance with the provisions of this rule.
 - (a) Analysis of Samples - VOC Determination
 - (i) Samples of Coatings as specified in subsections (C)(1)(a)(i) and (C)(1)(a)(ii) shall be analyzed as prescribed by EPA Reference

Method 24 for VOC content (without correction for Exempt Compounds) and ASTM Test Method D4457-85, or ARB Method 432 for determination of emissions of Exempt Compounds. Perfluorocarbon compounds shall be assumed to be absent from a product or process unless a manufacturer or facility operator identifies the specific individual compounds (from the broad classes of perfluorocarbon compounds) and the amounts present in the product or process and provides a validated test method which can be used to quantify the specific compounds.

- (b) Determination of Emissions-Operations with Emission Control Systems
 - (i) For operations with emission control systems, emissions of VOCs as specified in subsections (C)(1)(a)(i) or (C)(1)(a)(ii) shall be measured as prescribed by EPA Reference Method 25 for determining VOC emissions and control device efficiency, in combination with the methods prescribed in the Federal Register (55 FR 26865 of June 29, 1990) for determination of capture efficiency.
- (c) Determination of Transfer Efficiency
 - (i) Transfer Efficiency as required by subsection (C)(2)(a)(iii) shall be determined by procedures as prescribed in the SCAQMD document "South Coast Air Quality management District Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989".
- (d) Determination Of Percentage of Metal in Metallic Coatings
 - (i) Determinations shall be made using SCAQMD Method 311, "Determination of Percent Metal in Metallic Coatings by Spectrographic Method", as found in the SCAQMD document *Laboratory Methods Of Analysis For Enforcement Samples*.
- (e) Acid Content in Pretreatment Coatings
 - (i) Determinations of acid content in Pretreatment Coatings shall be made using ASTM Test Method D1613.

[SIP: Approved 04/10/00, 65 FR 18901, 40 CFR 52.220(c)(268)(8)(B)(1); Approved 6/13/95, 60 FR 31081, 40 CFR 52.220(c)(216)(i)(A)(1); Approved 12/20/93, 58 FR 662833, 40 CFR 52.220(c)(188)(i)(B)(1)]

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